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IS 1917 (Part 1) : 1991

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भाग 1 दहन पर क्षति ज्ञात करना

(पहला पुनरीक्षण)

Indian Standard

CHEMICAL ANALYSIS OF QUARTZITE AND HIGH SILICA SAND

PART 1 DETERMINATION OF LOSS ON IGNITION

(First Revision)

UDC 553·57 : 543·82

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

December 1991

Price Group 1

Methods of Chemical Analysis of Ores, Minerals and Allied Materials for Metallurgical Industry Sectional Committee, MTD 29

FOREWORD

This Indian Standard (Part 1) (First Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Methods of Chemical Analysis of Ores, Minerals and Allied Materials for Metallurgical Industry Sectional Committee had been approved by the Metallurgical Engineering Division Council.

IS 1917 : 1962 'Methods of Chemical Analysis of Quartzite and High Silica Sand' covers the methods for the determination of silica and other constituents of quartzite and high silica sand. The Committee decided to revise this standard into different parts and covering determination of each element in a separate part, which on publication would supersede the determination of that element given in IS 1917 : 1962. The determination of loss on ignition, silica, sodium, potassium, aluminium, iron, calcium, magnesium and titanium oxide in quartzite and high silica sand have been covered in this series.

This part covers the determination of loss on ignition. The other parts in this series are:

Part 2 Determination of sodium and potassium

Part 3 Determination of silica

Part 4 Determination of aluminium

Part 5 Determination of iron

Part 6 Determination of calcium and magnesium

Part 7 Determination of titania

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

Indian Standard

CHEMICAL ANALYSIS OF QUARTZITE AND HIGH SILICA SAND

PART 1 DETERMINATION OF LOSS ON IGNITION

(First Revision)

1 SCOPE

This standard (Part 1) covers the method for determination of loss on ignition in the range up to 1·0 percent in quartzite, and high silica sand.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard

IS No.	*Title*
1070 : 1977	Water for general laboratory use (*second revision*)
1811 : 1984	Methods of sampling foundry sands
2245 : 1962	Methods of sampling quartzite

3 SAMPLING

3.1 The sample shall be drawn and prepared after quartering in accordance with IS 2245 : 1962 or IS 1811 : 1984, as the case may be.

3.2 Grind 3 to 5 g of the sample so that it passes through IS Test Sieve No. 15 (149 microns). Dry the sample in a weighing bottle at 105°-110°C for 2 h. Keep the weighing bottles toppered in a desiccater and cool to room temperature. The sample is ready for chemical analysis.

4 QUALITY OF REAGENTS

Unless specified otherwise, analytical grade reagents and distilled water (*see* IS 1070 : 1977) shall be employed for the test.

5 DETERMINATION OF LOSS ON IGNITION

5.1 Outline of the Method

The sample is ignited at 1 000°C in a muffle furnace and the loss in mass is measured.

5.2 Procedure

Weigh accurately 1·000 g of the prepared sample (**3.2**) into a weighed platinum crucible. First heat gently and then raise the temperature slowly to 1 000°C. Finally, ignite at 1 000°C for half an hour, cool and weigh. Repeat heating, cooling and weighing till constant mass is obtained. Difference in mass represents loss on ignition.

5.2.1 *Calculations*

$$\text{Loss on ignition, percent by mass} = \frac{A - B}{C} \times 100$$

where

A = Initial mass in g, of the crucible with the sample,

B = Final mass in g, of the crucible with the sample, and

C = mass in g, of the sample taken.

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